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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

LAM, THANH

ART UNIT PAPER NUMBER

2834

DATE MAILED: 08/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/836,517

Applicant(s)

Du

Examiner

Thanh Lam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on elect. filed on 7/8/2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above, claim(s) 16-24 and 31-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 25-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-949) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 3 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-15, and 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prior art in view of Lok.

Regarding claims 1, 10, 14, 25, and 28, Prior art discloses an electric motor comprising: an armature having an armature shaft (18) and being disposed within said stator, wherein said armature includes a plurality of slots; a plurality of magnet wires formed in a plurality of coils and disposed in said slots to at least partially occupy said slots; a fan at one end of said armature shaft.

Lok discloses a stator (10); an armature (14) having an armature shaft and being disposed within said stator; a thermally conductive flowable plastic having a density substantially similar to said magnet wires for at least substantially filling a remainder of an area of each of said slots to balance said armature (col. 4, lines 33-40).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made use the fan and the armature structure of Prior art and provide with the thermally conductive flowable plastic as taught by Lok in order to improve the balance of the armature.

Regarding claim 2, the proposal in combination structure and material of Prior art and Lok disclose said fan is integrally formed from said thermally conductive plastic used to at least substantially encase said magnet wires.

Regarding claim 3, the proposal in combination structure and material of Prior art and Lok disclose said armature includes an armature stack having a plurality of circumferentially arranged slots within which said magnet wires are disposed; and wherein said thermally conductive plastic fills said slots.

Regarding claim 4, the proposal in combination structure and material of Prior art and Lok disclose said thermally conductive plastic comprises a composite thermoplastic.

Regarding claim 5, the proposal in combination structure and material of Prior art and Lok disclose said thermally conductive plastic has a density approximately equal to said magnet wires, to thereby eliminate the need for balancing of the armature after the plastic is molded over the armature.

Regarding claim 6, the proposal in combination structure and material of Prior art and Lok disclose said thermally conductive plastic comprises a high temperature nylon mixed with particles of a non-ferromagnetic material.

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Regarding claim 7, the proposal in combination structure and material of Prior art and Lok disclose said thermally conductive plastic comprises a thermoset plastic mixed with particles of a non-ferromagnetic material.

Regarding claim 8, the proposal in combination structure and material of Prior art and Lok disclose said non-ferromagnetic material comprises one of aluminum, ceramic and copper.

Regarding claim 9, the proposal in combination structure and material of Prior art and Lok disclose said non-ferromagnetic material comprises one of aluminum, ceramic and copper.

Regarding claim 11, the proposal in combination structure and material of Prior art and Lok disclose said thermally conductive plastic comprises a composite thermoplastic.

Regarding claim 12, the proposal in combination structure and material of Prior art and Lok disclose said thermally conductive plastic coating comprises particles of a non-ferromagnetic material.

Regarding claim 13, the proposal in combination structure and material of Prior art and Lok disclose said thermally conductive plastic coating comprises particles of one of the group of aluminum, ceramic and copper.

Regarding claim 15, the proposal in combination structure and material of Prior art and Lok disclose said thermally conductive plastic includes particles of one of the group of aluminum, copper and ceramic, to thereby provide said plastic with a density substantially equal to said magnet wires, to thereby eliminate the need to balance said armature.

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Regarding claims 26 and 29 and 30, the proposal in combination structure and material of Prior art and Lok disclose said flowable plastic comprises a thermally conductive flowable plastic.

Regarding claim 27, the proposal in combination structure and material of Prior art and Lok disclose said flowable plastic comprises a plastic having a consistency enabling said flowable plastic to be injected into said slots during an injection molding process.

Election/Restriction

3. Applicant's election with traverse of claims 1-15, 25-30 in Paper No. 7 is acknowledged. The traversal is on the ground(s) that group I and II of the claims are related to each other. This is not found persuasive because the two groups of claims are distinct from each other, the first group is structure/apparatus which differs from the second group as a method of forming. Beside, the two groups have differently class search.

The requirement is still deemed proper and is therefore made FINAL.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Lam whose telephone number is (703) 308-7626. The fax phone number for this Group is (703) 305-3432.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0656.



Thanh Lam

Patent Examiner

August 9, 2002